

Eng. Lib.  
Wahrs

# PUBLIC WORKS INDEX

VOLUME 58  
JANUARY-DECEMBER  
1927

## GENERAL INDEX

- Accidents Increase in 1926, Auto...162  
In Delaware, Causes of Highway...154  
Accounting Methods, Water Department...142  
Activated Sludge, Digestion of...253  
Sludge in England...170  
Sludge Method, Atmospheric Aeration in the...367  
Sludge Treatment of Trade Waste...23  
Activities of the Michigan State Highway Dept, Research...30  
Aeration in the Activated Sludge Method, Atmospheric...367  
Of Water and Sewage...366  
Aerial Maps for Highway Planning...216  
Aggregate, Determination of Moisture in...457  
Airplanes for Mosquito Control...426  
Airports Increasing...396  
Alabama Highways...223  
Altoona, Heaving Concrete in...88  
American Society of Municipal Improvements...485  
Report of Committee on Street Cleaning Refuse Collection and Snow Removal...486  
American Water Works Association...292  
Water Works Convention...277  
Appliances, New...353  
Appurtenances, Traffic Street...63  
Aqueduct, The Sao Paulo...451  
Arkansas, Road Construction and Maintenance in...6  
Asphalt Joints for Sewers...375  
Maintenance Without Recourse to Large Plants...99  
Asphaltic Oil Road Surfaces, Light...421, 459  
Assessing for Paving by the Front Foot...70  
Assessment of Cost of Paving Intersections...355  
Of Cost of Paving Street Intersections...306  
Assessments, Financing Public Improvements by Special...420  
Associate Editor, Public Works...25  
Atlanta-Macon Road, Construction Work on...458  
Austrian Good Roads Conference...332  
Automobile Registration and Gasoline Tax, Revenues from...215  
Baltimore's Incinerator Operation...24  
Base Situation, The Pavement...247  
Bases, West Virginia Highway...314  
"Berkeley Mix" for Patching Asphalt Pavements...32  
Bessemer, Modern Pumping Station for...291  
Bidders, Ohio Wants "Best" as well as "Lowest"...440  
Bids, Tabulation of...376  
Bid, Withdrawing A...34  
Birmingham, Mosquito Control in...147  
Biscayne Boulevard Lights...180  
Bituminous Gravel Concrete in England...441  
Bituminous Macadam Pavements Laid in 1926, Rock Asphalt and...112  
Bituminous Paving Mixtures, Researches on...66  
Bonds, New Jersey Limits Life of...223  
Bonds, State Highway...310  
Books and Libraries...96  
Boyer City, Mich., Subsoil Trouble in...85  
Brick by Sound, Classifying...278  
Brick in Recognized List, Two and one-half Inch Paving...181  
Brick Pavements Laid in 1926, Stone Block and...113  
Paving in Rockford, Ill...314  
Bridge Maintenance in Michigan...255  
Minocqua Timber Highway...382  
To Be Tested to Destruction, Concrete...236  
Winter Construction of Concrete...271  
Bridges, Survey of California...381  
The Carquinez...151  
Broken Culvert, Renewing a...39  
Burning Sewage Sludge...400  
Calcium Chloride in Gravel Roads...396  
California Experimental Pavement, Another...316  
Joint Sewage Outlet, A...75  
Pavements, Improvement in 1926...221  
Capillarity, Subsoil...95  
Carquinez Bridge, The...151  
Cast Iron Mains in Use, Total...227  
Pipe for Sewers in New Orleans...413  
Pipe, Importing...370  
Pipe Laid in 1926 (Table)...224  
Catchment Areas, Forestation of Water...435  
Causeway, A Three-Mile...36  
Cellulose in Imhoff Tanks, Distribution of...133  
Cement Briquette Molds, Paraffin for...354  
Factor...215  
Pointing Masonry with...458  
Production, Portland...421  
Scum From...154  
Cementing Porous Strata at Reservoir Sites...308  
Centrifugally Cast Iron Pipe, Specifications for...348  
Charities, Expenditures of Cities for Health, Sanitation and...170  
Charleston Water Works Notes...294  
Chicago, Garbage Disposal in...50  
Repose Collection and Disposal in...486  
Sewage Treatment Plants...301, 339  
Water Main Leakage in...56  
Chlorinating Sewage...436  
Chlorination at Fort Worth, Sewage...264  
Recent Developments in Sewage...465  
Chlorine Gas for Sewage Treatment in Germany...252  
Civil Service in New Bedford...358  
Cleaning and Refuse Disposal in Columbus, Street...330  
Relation of Type of Pavement to street...235  
Water Services in Longueuil...99  
Coagulating Agents, Calcium and Magnesium Hydrates as...203  
Collection and Incineration in Sewickley, Garbage...11  
Colloidal Interference, Sodium Aluminate for Elimination of...203  
Colorado, Public Water Supplies in...168  
Columbus, Sewage Treatment at...238  
Water Works...327  
Street Cleaning and Refuse Disposal in...330  
Street Lighting in...68  
Water Softening in...208  
Compact Re. The Delaware River, Tri-State...75  
Concrete Control...121  
Cores, and Thickness Tolerance...178  
In Altoona, Heaving...88  
Methods of Distributing...350  
Mixer, Prices, Reducing...58  
Pavement Contracted During 1926...117  
Pavement Laid in 1926—Table...106  
Pavements, Device to Support Reinforcing Steel in...39  
Paving Construction Record, Unusual...37  
Road Construction, Time Losses in...128  
Conduits, Concrete Cradles for Large Pipe...251  
Connecticut, Cross Connections in...352  
Refuse Disposal in...14  
Connections, Size and Material for House...206  
Consideration Needed of Low Cost Highway's, More...25  
Construction and Maintenance of Gravel Roads in Iowa...7  
Maintenance in Arkansas, Road...6  
Contract, Municipal Work by Day Labor and by...396  
Contracting Course in North Carolina...63  
Correspondence Schools, For Control of...96  
Corroded Poles, Reclaiming...105  
Corrosion of Pipes, Soil...309  
Cost Accounting on Street Maintenance Keeping on Street Cleaning Work...69  
Keeping on Street Department Work...290  
Material Handling Equipment and...305  
Counties in 1926, Road Construction in...188, 310  
Cradles for Large Pipe Conduits, Concrete...251  
Cross Connections in Connecticut...352  
Cross-Sectioning, California Engineer's Invention for...175  
Cuban Central Highway, The...163  
Culvert Costs in Montana...94  
Renewing a Broken...39  
Dallas County Roads, Surface Treatment of...40  
Dam, Waterproofing a Concrete...305  
Day Labor and by Contract, Municipal Work by...396  
Dayton, Water Main Extensions in...60  
DeKalb, Ill., Sub-Base at...86  
Delaware, Causes of Highway Accidents in...154  
River, Tri-State Compact Re. the...75  
Denver Reservoirs, Temperatures in...405  
Sewage, Irrigation with...90  
Deterioration Data, Concrete Road...304  
Detours, State Maintains...162  
Detroit, Down Town Street Cleaning in...45  
Device to Support Reinforcing Steel in Concrete Pavements...39  
Digestion, Improving Sewage Sludge...19  
Of Sewage Screenings...455  
Disposal in Chicago, Garbage...50  
In Connecticut, Refuse...14  
In England, Refuse...453  
Problem Near Solution, Garbage...61  
Distributing Concrete, Methods of...350  
Drainage at Zanesville, Subsoil...87  
Duplicating Roads vs. Widening...437  
Durham's New Water Works...197  
Dust Elimination on Michigan Highways...178  
Laying on City Streets...61  
Prevention in Missouri...450  
Problem on Washington Highways...48  
Reduces Highway Capacity...179  
Electric Production, Increase in...156  
Electrical Pumping Equipment for Kansas City...207  
Electricity, Increasing Use of...62  
Elizabeth's Telford Pavements, Resurfacing...36  
Engineer, The Municipal...70  
Engineering and the Flood, Sanitary...315  
Engineers, Traffic...180  
England, Activated Sludge in...170  
Bituminous Gravel Concrete in...441  
Refuse Disposal in...453  
Storm Sewer Design in...274  
Street Name Signs in...293  
English View of Sewage Disposal...400  
Equipment and Cost, Material Handling...305

Road Maintenance .....	139	More Consideration Needed of Low Cost .....	25	Mosquito Control, Airplanes for .....	148, 426
Erosion, Loss of Reservoir Capacity Through .....	18	New York .....	441	Control in Birmingham .....	147
Essays, Prizes for Road .....	63	Snow Removal from .....	62	Larvae in Water Barrels, Preventing .....	338
Expenditures of Cities for Health, Sanitation and Charities .....	170	Tennessee's First—Stage .....	9	Motor Vehicles, Starting Kick of .....	71
Experiments, Recent Results from Separate Sludge Digestion .....	50	Use of Vialog on California .....	138	Municipal Engineer, The .....	70
Extensions in Dayton, Water Main .....	60	Holland Tunnel Opening .....	436	Engineering Salaries and Po- sitions .....	478
Federal Aid Road Work .....	26	Hose Coupling Thread, Standard- ization of .....	382	Government, Measuring .....	426
Fertilizer, Sewage Sludge as .....	276	House Connections, Size and Ma- terial for .....	206	Nevada's Gravel Highways .....	1
Wet Sludge as .....	374	Hydrants and Gate Valves Placed in 1926 and Total in Use (Table) .....	232	Newark, Street Cleaning, Refuse Collection and Snow Removal in .....	447
Fill Settlement in Peat Marshes .....	174	Ice, Air Compressor for Street .....	270	New Bedford, Civil Service in .....	358
Filler for Granite Block Pavements .....	118	Imhoff Tank Gases and Odors .....	204	New England Purification Plants, Two .....	321
Fillers and Expansion Joints, Joint .....	117	Tank Operators, Tools for .....	346	Water Works Convention .....	383
Filter Plant, New Orleans' New .....	398	Tank, Distribution of Cellu- lose in .....	133	New Jersey, Joint Outlet Sewer in .....	72
Filters, Head Losses in Rapid Sand .....	58	Importing Cast Iron Pipe .....	370	New Mexico, Low Cost Roads in .....	5
Operating Rapid Sand .....	266	Incinerator Operation, Baltimore's .....	24	New Orleans, Cast Iron Pipe for Sewers in .....	413
Financing Public Improvements by Special Assessment .....	420	Incinerators, Toledo .....	167	New Orleans' New Filter Plant .....	398
Fire Rates, Water Works Improve- ments Reduce .....	251	Indianapolis Water Company Rate Case .....	218	New Orleans, Street Cleaning in .....	388
Requirements, Special Pump- ing Arrangement Meets .....	135	Indiana's Speed Limits 40 and 20 Miles .....	161	New York Highways .....	441
Flood Area, Sanitary Work in the .....	369	Industries, Cheap Water for .....	354	New York's Garbage at Sea, Dump- ing .....	442
Discussion by Engineers .....	396	Infiltration into Sewers .....	363	Norfolk, Garbage Collection in .....	246, 344
Sanitary Engineering and the .....	315	Inspection, Metering vs. Plumbing .....	69	Norristown, Road Maintenance in .....	127
Sanitary Engineering Prob- lems of the Mississippi .....	288	Inspection, More Efficient Road .....	237	No. Carolina, Contracting Course in .....	63
Flower Boxes, Street Department Distributes .....	245	Intersections, Assessment of Cost of Paving Street .....	306	Highway, Paralleling a .....	443
Footpaths on Highways .....	64	Investigation in Syracuse, Water Waste .....	73	Results of State Roads in .....	31
Forestation of Water Catchment Areas .....	435	Iodizing Public Water Supplies .....	260	North Dakota Highways, Area Served by .....	30
Fort Worth, Sewage Chlorination at .....	264	Iowa, Construction and Mainte- nance of Gravel Roads in .....	7	Snow Handling in .....	454
Friction Losses in Cement-Lined and Tar Coated Pipe .....	474	Road Signs .....	162	Oakland-Alameda Estuary Subway .....	484
Front Foot, Assessing for Paving by the .....	70	Well Water Recession in .....	413	Odors, Imhoff Tank Gases and .....	204
Frost Boils in Wisconsin Roads .....	88	Irrigation With Denver Sewage .....	90	Ohio Wants "Best" as well as "Lowest" Bidders .....	440
Fuel Used by Power Plants .....	408	Italy, Gambusia in .....	331	Ohio's Highway Traffic, Survey of .....	332
Funds for City Streets, State High- way .....	424	Jamalca Sewage Treatment Plant .....	91	Oil Road Surfaces, Light As- phaltic .....	421, 459
Gambusia in Italy .....	331	Joint Fillers and Expansion Joints .....	117	Oiling, "Turnover" Method of Road .....	377
Garbage at Sea, Dumping New York's .....	442	Joints for Sewers, Asphalt .....	375	Operators of Water and Sewage Plants, Instructing .....	217
Collection in Norfolk .....	246, 344	Jury Service for Civil Engineers, No .....	332	Organization, Snow Handling .....	15
Disposal in Chicago .....	50	Kansas City, Electrical Pumping Equipment for .....	207	Oswego, Street Resurfacing in .....	109
Disposal Problem Near Solu- tion .....	61	Kick of Motor Vehicles, Starting .....	71	Oxnard, Experimental Pavement, The .....	283
In Sioux City, Wrapped .....	181	Kinston, N. C., New Water Supply of .....	93	Parades, Roping Off Streets for .....	13
Gary, Salvaging Pavements in .....	146	Labor, Wages Paid Common .....	481	Paraffin for Cement Briquette Molds .....	354
Gases and Odors, Imhoff Tank .....	204	Laundry Wastes in Sewage .....	337	Passaic Valley Sewer, Results From .....	210
Gasoline, Building Roads with .....	181	Leakage in Chicago, Water Main .....	56	Patching Pavement Cuts in Wil- mington .....	105
Tax, Revenues from Automob- ile Registration and .....	215	Leominster, Remedying Water Shortage at .....	255	Pavement, Another California Ex- perimental .....	316
Gate Valves Placed in 1926 and Total in Use, Hydrants and (Table) .....	232	Lighting Country Highways .....	131	Base Situation, The .....	247
Gloversville, N. Y., Underdrainage of Pavements in .....	89	In Columbus, Street .....	68	Contracted During 1926, Con- crete .....	117
Gold, Paving With .....	238	In Toledo, Street .....	441	Cuts in Wilmington, Patch- ing .....	105
Good Roads Conference, Austrian .....	332	System, Woodward Avenue Street .....	263	Design, Details of .....	219
Goose-Necks, Lead, Wrought Iron and Copper .....	259	Lights, Biscayne Boulevard .....	180	Design in Relation to Traf- fic .....	103
Government, Measuring Municipal .....	476	Longueuil, Cleaning Water Services in .....	99	Laid in 1926, Concrete (Table) .....	106
Granite Block Pavements, Filler for .....	118	Losses in Rapid Sand Filters, Head .....	58	The Oxnard Experimental .....	283
Gravel and Stone Roads, Surface Treatment of .....	261	Macadam and Gravel Laid in 1926, Waterbound .....	115	Pavement to Street Cleaning, Rela- tion of Type of .....	235
Grading Road .....	64	Machinery by Waterworks Depart- ments, Use of Trenching .....	292	Pavements, Device to Support Re- inforcing Steel in Concrete .....	39
Highways, Nevada's .....	1	In Refuse Collection, Street Cleaning and Snow Removal .....	480	Filler for Granite Block .....	118
Laid in 1926, Waterbound .....	115	Texas Contracts for Road .....	376	Improvement in 1926 Cali- fornia .....	221
Macadam and .....	115	Machines and Man-Power .....	479	In Gary, Salvaging .....	146
Roads in Iowa, Construction and Maintenance of .....	7	Maine, Snow Removal in .....	209	In Gloversville, N. Y., Un- derdrainage of .....	89
Trucking Road .....	357	Maintenance, Cost Accounting on Street .....	268	Laid in 1926, Rock Asphalt and Bituminous Macadam .....	112
Great Britain, Refuse Disposal in .....	317	Of Water Systems, Practical Hints on .....	256	Laid in 1926, Stone Block and Brick .....	113
Water Purification in .....	347	Without Recourse to Large Plants, Asphalt .....	99	Resurfacing Ellabeth's Tel- ford .....	36
Guards, Tests of Highway .....	149	Maintaining Wyoming Roads .....	4	The "Berkeley Mix" for Patching Asphalt .....	32
Handling Traffic During Street Construction .....	24	Managers, Service for City .....	428	Paving Construction Record, Unus- ual Concrete .....	37
Health Engineering, Public .....	153	Man-Power, Machines and .....	479	Intersections, Assessment of Cost of .....	355
Sanitation and Charities, Expenditures of Cities for .....	170	Maps for Highway Planning, Aerial .....	216	Job, A Rush .....	414
Heating a Pumping Station by Electricity .....	98	Marshes, Fill Settlement in Peat .....	172	Paving Questionnaire Returns .....	145
Heaving Concrete in Altoona .....	88	Masonry with Cement, Pointing .....	458	Specifications for 1927 .....	218
of Yellow Clay Subsoil .....	85	Material Handling Equipment and Costs .....	305	Street Intersections, Assess- ment of Cost of .....	306
High Man Got the Job, The .....	16	Merchantville-Pensauken Sewage Treatment Plant, The .....	409, 468	Peat Marshes, Fill Settlement in .....	172
Highway Bonds, State .....	310	Metering vs. Plumbing Inspection .....	69	Photographic Records of Public Work, Systematic .....	141
Highway Capacity, Dust Reduces .....	179	Michigan, Bridge Maintenance in .....	255	Photography for Engineers .....	415
Funds for City Streets, State .....	424	Michigan Highways, Dust Elimina- tion on .....	178	Piers, Removing High Bridge .....	316
Highway Guards, Tests of .....	149	Road Maintenance Equip- ment .....	152	Piney Marsh, Road Across .....	336
Maximum Use of .....	179	State Highway Dept., Re- search Activities of the .....	30	Pipe, Friction Losses in Cement Lined and Tar Coated .....	474
Notes, South American .....	327	Mississippi Flood, Sanitary En- gineering Problems of the .....	288	Lines, Stresses in Buried .....	272
Paralleling A North Caro- lina .....	443	Highway Work .....	5	Prices, Iron .....	356
Planning, Aerial Maps for .....	216	Missouri Highway Sanitation .....	48	Specifications for Centrifug- ally Cast Iron .....	348
Research, Reports on .....	27	Dust Prevention in .....	450	Pipes, Soil Corrosion of .....	309
Safety .....	159	No Roadside Tree Planting in .....	473	Old Cast Iron .....	61
Sanitation, Missouri .....	48	Mixing Channel Having Small Loss of Head, Design of .....	426	Pitometer in St. Louis, Uses of .....	17
The Cuban Central .....	163	Mixtures, Researches on Bitumin- ous Paving .....	66	Pointing Masonry with Cement .....	458
Traffic, Survey of Ohio's .....	332	Moisture in Aggregates, Determina- tion of .....	457		
Work, Mississippi .....	5	Montana, Culvert Costs in .....	94		
Workers, County .....	179	Montreal's Typhoid Epidemic .....	315		
Highways, Area Served by North Dakota .....	30				
De-ironing the .....	32				
Footpaths on .....	65				
Lighting Country .....	131				



Poles, Reclaiming Corroded .....	105	Construction Work on Atlanta-Macon .....	458	Design in England, Storm ..	274
Pollution and Natural Purification of Illinois River .....	399	Deterioration Data, Concrete .....	304	in New Jersey, Joint Outlet..	72
Of Wells via Ground Water .....	368	Essays, Prizes for .....	63	in Swamp, Laying Watertight .....	372
Prevention, Snow Drift .....	35	Gravel, Grading .....	64	Pipe in Soft Ground, Hauling Heavy .....	156
Prices, Iron Pipe .....	356	Gravel, Trucking .....	357	, Results from Passaic Valley ..	210
, Reducing Concrete Mixer .....	58	Inspection, More Efficient .....	237	Sewerage Information in This Issue ..	395
, The Trend of .....	71	Location on South Slopes .....	278	Sewers, Asphalt Joints for .....	375
Prizes for Road Essays .....	63	Machine Cutting Edges, Standardizing .....	336	, Infiltration Into .....	363
Projects at University of Maine, Research .....	31	Maintenance Equipment .....	139	in New Orleans Cast Iron Pipe for .....	413
Of the U. S. Bureau of Public Roads, Current Research .....	64	Maintenance Equipment, Michigan .....	152	Sewickley, Garbage Collection and Incineration in .....	11
Providence Traffic Marker .....	381	Maintenance in Norristown .....	127	Sheffield Street Notes .....	23
Public Works for Slack Times .....	274	Oiling, "Turnover" Methods of .....	377	Shepaug Tunnel, Waterbury Waterworks .....	295
Works in the United States .....	439	Show, Exhibit Space at the 1928 .....	301	Side Hill Work in San Francisco ..	132
Pumping Arrangements Meets Fire Requirement, Special .....	135	Show, The Convention and .....	479	Sidewalks, Cement .....	115
Equipment for Kansas City, Electrical .....	207	Surfaces, Light Asphaltic Oil .....	421, 459	Signs in England, Street Name ..	293
Station by Electricity, Heating a .....	98	Work, Federal Aid .....	26	, Iowa Road .....	162
Station for Bessemer, Modern .....	291	Roads, Calcium Chloride in Gravel ..	396	to be Standardized, Street ..	128
Pumps, Advantages of Electrically Driven .....	261	For Winter Traffic, Open .....	144	Sioux City, Wrapped Garbage in ..	181
Purification, Chemical Reactions in Water .....	325	, Frost Boils in Wisconsin .....	88	Sliding Hill, Holding a .....	451
In Great Britain, Water .....	347	In New Mexico, Low Cost .....	5	Sludge as Fertilizer, Sewage ..	276
Methods, Keep Informed on .....	353	, Medium Cost .....	437	as Fertilizer, Wet .....	374
Of Illinois River, Pollution and Natural .....	399	, Money Spent in 1926 in Maintaining and Constructing ..	183	, Burning Sewage .....	400
Plants, Two New England .....	321	Open in Winter, Keeping Rhode Island .....	464	Digestion Experiments, Recent Results from Separate ..	50
Processes, Studies of Efficiency of Water .....	473	, Surface Treatment of Dallas County .....	40	Digestion in Wisconsin, Separate ..	124
Quincy Reservoir, Lining and Covering .....	53	, Surface Treatment of Gravel and Stone .....	261	, Digestion of Activated .....	253
Rate Case, Indianapolis Water Company .....	218	Widening vs. Duplicating .....	437	Treatment of Trade Waste, Activated .....	23
Record, Unusual Concrete Paving Construction .....	37	With Gasoline, Building .....	181	Snow Drift Prevention .....	35
Records of Public Work, Systematic Photographic .....	141	Work, Salaries on .....	477	Handling Organization .....	15
Sewage Plant .....	342	Rockford, Ill., Brick Paving at ..	314	Handling in North Dakota ..	454
Refuse Collection and Disposal, Street Cleaning and Snow removal .....	481, 486	Roping Off Streets for Parades ..	13	Removal from Highways .....	62
Collection and Disposal in Toronto .....	164	Runoff Records, Street .....	429	Removal, Machinery in Street Cleaning, Refuse Collection and ..	480
Collection and Disposal in Chicago .....	486	Rutherford, Subsoil Troubles in ..	87	Removal in Maine .....	209
Collection, Street Cleaning and Snow Removal, Machinery in .....	480	San Francisco, Sewer Connections in ..	454	Removal in Newark, Street Cleaning, Refuse Collection and ..	447
Refuse Collection in San Francisco ..	345	Safety, Highway .....	159	Sodium Aluminate for Elimination of Colloidal Interference ..	203
Collection Statistics .....	482	Speed and Highway .....	153	Softening in Columbus, Water ..	208
Collection, Street Cleaning and Snow Removal in Newark .....	447	Salaries and Positions, Municipal Engineering .....	478	Soils, Classification of Subgrade ..	250
Disposal in Columbus, Street Cleaning and .....	330	On Road Work .....	477	Solution, Garbage Disposal Problem near .....	61
Disposal in Connecticut .....	14	Sand-Clay Roads in South Carolina ..	8	South American Highway Notes ..	327
Disposal in England .....	453	San Francisco, Refuse Collection in ..	345	South Carolina, Sand-Clay Roads in ..	8
Disposal in Great Britain .....	317	, Side Hill Work in .....	132	Speed and Highway Safety .....	153
Disposal, Practice in .....	480	, Widening Streets in .....	442	Limits 40 and 20 Miles, Indiana's ..	161
, Salable .....	209	Sanitary Engineering Positions Open ..	96	Springfield, Ohio, Water Waste Survey at .....	276
, Underground Removal of .....	246	Engineering Problems of the Mississippi Flood .....	288	Springs, Large in the United States ..	270
Reinforcing Steel in Concrete Pavements, Device to Support .....	39	Engineers, Conference of State ..	275	Standardization of Hose Coupling Threads .....	382
Removing High Bridge Piers .....	316	Engineers, State .....	273	Standardizing Road Machine Cutting Edges .....	366
Renewing a Broken Culvert .....	39	Work in the Flood Area .....	369	Standards Committee, Projects of American Engineering .....	388
Repairing Over Trenches .....	170	Sanitizing a Small City .....	379	State Roads in North Carolina, Results of .....	31
Reports by Municipal Departments ..	273	Sanitation and Charities, Expenditures of Cities for Health ..	170	Status of Federal Aid Highway Construction (Table) .....	26
Reports, Dramatizing Water Wks. ..	326	, Missouri Highway .....	48	Steel in Concrete Pavements, Device to Support Reinforcing .....	39
Reports, Municipal .....	354	Sao Paulo Aqueduct, The .....	451	Pipe Laid in 1926 and Total in Use (Table) .....	230
On Highway Research .....	27	Scarifying Subgrade Desirable ..	176	Stone Block and Brick Pavements Laid in 1926 .....	113
Research Activities of the Michigan State Highway Department ..	30	Screenings, Digestion of Sewage ..	455	Roads, Surface Treatment of Gravel and .....	261
Projects of the U. S. Bureau of Public Roads, Current .....	64	St. Louis, Uses of Pitometer in .....	17	Stream Pollution in Wisconsin ..	338
Researches on Bituminous Paving Mixtures .....	66	Schenectady, Sewage Treatment at ..	358	Street Appurtenances, Traffic Cleaning and Refuse Disposal in Columbus .....	330
Reservoir Capacity Loss Through Erosion .....	18	Scoring of Water Supplies, Sanitary ..	386	Cleaning and Snow Removal, Refuse Collection and Disposal ..	481, 486
, Quincy, Lining and Covering .....	53	Scum From Cement .....	154	Cleaning Cost Reduced in Toledo .....	408
Sites, Cementing Porous Strata At .....	308	Seattle, Subsoil Difficulties in ..	140	Cleaning Costs .....	480
Reservoirs, Tadpoles in .....	169	Sewage, Aeration of Water and ..	366	Cleaning in Detroit, Down Town .....	45
, Temperatures in Denver .....	405	Chlorination at Fort Worth .....	264	Cleaning in New Orleans .....	388
Results from Separate Sludge Digestion Experiments, Recent ..	50	Chlorination, Recent Developments in .....	465	Cleaning, Refuse Collection and Snow Removal in Newark ..	447
Resurfacing Elizabeth's Telford Pavements .....	36	Disposal and Water Purification, Co-ordination of .....	149	Cleaning, Relation of Type of Pavement to .....	235
In Oswego, Street .....	109	Disposal, Economic Side of .....	475	Cleaning and Snow Removal, Machinery in Refuse Collection ..	480
Revenues from Automobile Registration and Gasoline Tax .....	215	Disposal, English View of .....	400	Cleaning Work, Cost Keeping on Department Distributes Flower Boxes .....	245
Rhode Island Roads Open in Winter, Keeping .....	464	Disposal in Unsewered Areas ..	395	Department Work, Cost Keeping on .....	290
Richmond, Water Purification at ..	241	, Irrigation with Denver .....	90	Lighting in Columbus .....	68
Right Claimed to Use of Sewage ..	300	, Laundry Wastes in .....	337	Maintenance, Cost Accounting on .....	268
River, Pollution and Natural Purification of Illinois .....	399	Outlet, A California Joint .....	75	Streets, Dust Laying on City .....	61
Road Across Piney Marsh .....	336	Plant Records .....	342	for Parades, Roping off .....	13
Road Builders' Association, Ambitions of the American .....	102	Plant, Wards Island for New York .....	180	in San Francisco, Widening ..	442
Construction and Maintenance in Arkansas .....	6	Plants, Instructing Operators of Water and .....	217	Stresses in Buried Pipe Lines .....	272
Construction in Counties in 1926 .....	188, 310	Pumping, Trenton .....	23	Sub-base at DeKalb, Ill. ....	86
Construction in 1926 .....	182	Purification, Research in .....	476	Subgrade Desirable, Scarifying ..	176
Construction, Time Losses in Concrete .....	128	, Right Claimed to Use of .....	300	tenance in Norristown .....	127
		Screenings, Digestion of .....	455		
		Sludge Digestion, Improving ..	19		
		Treatment at Columbus, Ohio ..	238		
		Treatment at Schenectady ..	358		
		Treatment for North Toronto ..	135		
		Treatment, Future Pumping Station Used for .....	373		
		Treatment in Germany, Chlorine Gas for .....	252		
		Sewage Treatment Plant, Jamaica ..	91		
		Treatment Plant, The Merchantville-Pensauken ..	409, 468		
		Treatment Plant, Worcester ..	432		
		Treatment Plants, Chicago .....	301, 339		
		Treatment Plants, Operating ..	431		
		Sewer Connections in San Francisco ..	454		
		Construction in 1927 .....	391		
		Construction in Worcester, Mass. ....	371		

Subgrade Soils, Classification of.....	250	Purification, Chemical Reactions in .....	325	Assessments, Collection of Special.....	403
Sub-soil Capillarity .....	95	Purification in Great Britain.....	347	Assignor and Assignee of Construction Contract, Rights of .....	280
Sub-soil Difficulties in Seattle .....	140	Purification Plants, Two New England .....	321	Association By-Law Requiring Dues Based on Percentage of Public Works Contracts Held Invalid .....	240
Drainage at Zanesville .....	87	Purification, Co-ordination of Sewage Disposal and .....	149	Audit of Town's Books, Compensation for .....	240
Heaving of Yellow Clay .....	85	Purification Processes, Studies of Efficiency of .....	473	Auditorium Districts Held Unconstitutional, Statute Authorizing .....	42
Trouble in Boyne City, Mich. ....	85	Purity, Ultra Violet Rays as Test of .....	60	Award Held Valid, Paving Contract.....	158
Troubles and Remedies .....	81	Satisfactoriness of .....	217	Barrier Held Not Required at Junction of Detour with Highway.....	195
Troubles in Rutherford .....	87	Services in Longueuil, Cleaning .....	99	Benefited by Change of Grade, Where Property is .....	446
Troubles in Wichita, Remedies for .....	83	Shortage at Leominster, Remedying .....	255	Bidding and Provision for Payment of Cost Must Be Followed, State Roads Contracted for by Counties; Missouri Statute Requires Competitive .....	42
Subway, Oakland-Alameda Estuary.....	484	Softening in Columbus .....	208	Bidding Required for Public Work Above Specified Amount, Ordinance and .....	44
Surface Treatmet of Dallas County Roads .....	40	Supplies in Colorado, Public.....	168	Bld, Ordinance Requiring Anti-Combination Affidavit with .....	195
Surveying, Ancient Tunnel .....	468	Supplies, Iodizing Public .....	260	Billboard Ordinance, Validity of.....	404
Surveys, Instructions for Topographic .....	214	Supplies, Sanitary Scoring of.....	386	Blasting, Contractor's Liability for Damage by .....	446
Swamp, Laying Water-Tight Sewer in .....	372	Supply Considered, Dual .....	369	Bond, Animal Feed Supplied to Grading Contractor Held Covered by His .....	362
Syracuse, Water Waste Investigation in .....	73	Supply, New Sources of .....	95	Bond Covering Claims or Material—Men Furnishing Material to Sub-Contractor on Public Works, Statute and .....	239
Water Works Notes .....	15	Supply of Kinston, N. C., New .....	93	, Hauling Sand for Subcontractor Covered by Government Injury to Employee Not Covered by Government Contractors .....	361
Tadpoles in Reservoirs .....	169	Supply, Water Dogs in a City .....	97	, In Action for Damages for Breach of Promise to Give Bond, Materialman's Remedy Where Government Contractor Fails to Give.....	445
Telford Pavements, Resurfacing Elizabeth's .....	36	Systems, Practical Hints on Maintenance of .....	256	, Is Complied with, Material Man's Duty to See that Statute as to Public Works Contractor's .....	196
Temperatures in Denver Reservoirs.....	405	Waste Investigation in Syracuse .....	73	, Liability of Surety on Counter Indemnity .....	362
Tennessee's First-Stage Highways .....	9	Works Association, American.....	292	, Materialman's Right of Recovery on Public Contractor's.....	280
Test of Water Purity, Ultra-Violet Rays as .....	60	Works, Columbus, Ohio .....	327	, Materialman's Right to Indemnity Under Public Works.....	404
Texas Contracts for Road Machinery .....	376	Works Convention, American.....	277	, Municipality Held Not Liable to Materialman for Failure to Require Statutory Contractor's .....	404
Thickness Tolerance, Concrete Cores and .....	178	Works Cure-Alls, No .....	353	, Must Be Followed, Statutory Procedure in Action on Road Contractor's .....	280
Toilet Type to Typhoid Prevalence, Relation of .....	425	Works Department, Use of Trenching Machinery by .....	292	, Oil and Gasoline for Machinery Used in Digging Canals and Ditches within Statute as to Contractor's.....	44
Toledo Incinerators .....	167	Works Details, Discussion of.....	434	On City's Failure to Do so, Materialman's Right to Sue on Contractor's .....	157
, Street Cleaning Cost Reduced in .....	408	Works, Durham's New .....	197	, One Premium Held to Cover Period of Road Contract Under Terms of Application for.....	281
, Street Lighting in .....	441	Works Improvements Reduce Fire Rates .....	251	, Rental of Concrete Mixer and Other Machinery Used in Road Construction Held Not Within Contractor's .....	158
Topographic Surveys, Instruction for .....	214	Works, Information Concerning .....	224	, Subcontractor on Road Work Held Entitled to Protection of Road Contractor's Statutory .....	279
Toronto, Refuse Collection and Disposal in .....	164	Works Notes, Charleston .....	294	, Time for Action on Contractor's .....	362
, Sewage Treatment for North.....	135	Works Notes, Syracuse .....	15	To Keep in Repair, Acceptance of Sewer System Did Not Release Parties from Obligation Under Contract and .....	282
Trade Waste, Activated Sludge Treatment of .....	23	Works Pumping Plants in Service, Types of .....	58	Under Oklahoma Statute, No Recovery Allowed for Partial Wear of Contractor's Equipment on .....	281
Traffic During Street Construction, Handling .....	24	Works Reports, Dramatizing.....	326	Where Statute Specifically Includes Fuel, Gasoline and Oil Covered by Public Works Contractor's .....	41
Engineers .....	180	Works, Shepaug Tunnel, Waterbury .....	295	Bonds Deposited with Bank Becoming Insolvent Not a Preferred Claim, Proceeds of County Road .....	281
Marker, Providence .....	381	Waste Survey at Springfield, Ohio .....	276	Held Valid Notwithstanding Irregularity of Procedure, Paving .....	445
Pavement Design in Relation to .....	103	Waterbury, Waterworks Shepaug Tunnel .....	295	, Law Governing Public Works Contractor's .....	361
Signs to be Standardized, Street .....	128	Waterproofing a Concrete Dam .....	305	, Materials and Labor Covered by Highway Contractor's .....	240
Study, Bureau for .....	96	Well Water Recession in Iowa .....	413	Bridge Before Crossing It With Heavy Load, Statutory Duty to Plank .....	282
Survey, How to Make a .....	163	Wells, Repairing Leaky Artesian .....	203	Bridge Over Creek Held Not a Local Improvement Justifying Special Assessment .....	42
, Survey of Ohio's Highway.....	332	Wells via Ground Water, Pollution of .....	368		
Treatment of Dallas County Roads, Surface .....	40	West Virginia Highway Bases .....	314		
Tree Planting in Missouri, No Roadside .....	473	Wichita, Remedies for Subsoil Troubles in .....	83		
Trenches, Repaving Over .....	170	Wilmington, Patching Pavement Cuts in .....	105		
Trenton Sewage, Pumping .....	23	Winter Construction of a Concrete Bridge .....	271		
Trickling Filter Distributors .....	432	Wisconsin Roads, Frost Boils in .....	88		
Filters, Ventilation in .....	154	Wisconsin, Separate Sludge Digestion in .....	124		
Tri-State Compact Re. the Delaware River .....	75	Stream Pollution in .....	338		
Trucking Road Gravel .....	357	Withdrawing a Bid .....	34		
Truck Weights, Rights of States to Limit .....	250	Worcester, Mass., Sewer Construction in .....	371		
Tunnel Surveying, Ancient .....	468	Worcester Sewage Treatment Plant.....	432		
"Turnover" Method of Road Oiling.....	377	Work Increases, Public .....	371		
Typhoid Epidemic, Montreals .....	315	Wyoming Roads, Maintaining .....	4		
Typhoid Prevalence, Relation of Toilet Type to .....	425	Zanesville, Subsoil Drainage at .....	87		
Underdrainage of Pavements in Gloversville, New York .....	89	Zoning Progress in the United States .....	438		
U. S. Bureau of Public Roads, Current Research Projects of the .....	64				
University of Maine, Research Projects at .....	31	<b>LEGAL NEWS</b>			
Unsewered Areas, Sewage Disposal in .....	395	Abandoned by Paving Only Part, Balance of Dedicated Street Not .....	42		
Use of Electricity, Increasing .....	62	Abandoned Public Works Contract, City's Right to Relet .....	361		
Uses of Plometer in St. Louis .....	17	Abandonment of Contract for Failure to Make Contract Payments .....	362		
Utilities, Municipal Operation of.....	437	Abandonment of Highway, Proof of .....	281		
Utility Properties to Corporations, Selling Municipal .....	438	Acceptance of Sewer System Did Not Release Parties from Obligation under Contract and Bond to Keep in Repair .....	282		
Valves and Services, Record for Locating .....	132	Acceptance of Streets, etc., Laid off on Plat by Owner, Necessity for .....	240		
Ventilation in Trickling Filters .....	154	Advertising on Traffic Regulators Held Not Subject to Injunction by Private Citizens.....	157		
Vialog on California Highways, Use of .....	138	Agreement to Furnish Capital to Road Contractor Does Not Constitute a Partnership .....	195		
Violet Rays, Ultra, as Test of Water Purity .....	60	Agreement with Bidders Voiding Paving Contract .....	43		
Wages Paid Common Labor .....	481	Alteration of Road Contract Not Releasing Surety .....	446		
Wards Island for New York Sewage Plant .....	180	Anti-Combination Affidavit with Bid, Ordinance Requiring .....	195		
Washington Highways, Dust Problem on .....	48	Approval, Passing of Title to Road Machine Sold on .....	445		
Wastes in Sewage, Laundry .....	337	Assessing Railroad Property for Hard Surfaced Road, Method of .....	44		
Water .....	60	Assessment of Building in Course of Construction .....	361		
Water and Sewage, Aeration of .....	366				
Water and Sewage Plants, Instructing Operators of .....	217				
Company Rate Case, Indianapolis .....	218				
Department Accounting Methods .....	142				
for Industries, Cheap .....	354				
Dogs in a City Water Supply .....	97				
Main Extensions in Dayton .....	60				
Main Leakage in Chicago .....	56				
Water Power, Rating .....	180				
Purification at Richmond .....	241				



- Cancellation of Road Contract Entered into Thru Mutual Mistake .....282
- Capital to Road Contractor Does Not Constitute a Partnership, Agreement to Furnish .....195
- Change of Route of Road Under Construction — Additional Compensation .....196
- City Automobiles Held a Proprietary Function, Maintenance of Garage for Repairing ... 43
- City Officials to Issue Retail Dealers' Licenses, Discretion of... 44
- Claim Against Improvement District, Conclusiveness of Decree for Highway Engineer's 42
- Claim in Excess of Fund Created to Defray Construction Work Held Illegal .....157
- Claim to Commissioners Before Suing, Road Contractor Must Present .....282
- Compensation, Change of Route of Road Under Construction—Additional .....196
- Compensation for Open Road over Land Held Under Government Patent ..... 42
- Compensation Fund, Extent of Road Contractor's Liability for Premium to Workmen's .....280
- Competitive Bidding and Provision for Payment of Cost Must Be Followed, State Roads Contracted for by Counties; Missouri Statute Requires ... 42
- Condemnation for Fire Stations Not Affected by Restrictions in Dedication, City's Right of... 44
- Condemnation Proceedings Held Not Recoverable by Subsequent Purchases, Damages for Destruction of Building Torn Down by City After ... 43
- Construction Assessment of Building in Course of .....361
- Construction Work Held Illegal, Claim in Excess of Fund Created to Defray .....157
- Contract and Property Rights of Railroad in Street Subject to Reasonable Regulation by Municipality ..... 44
- Award Held Valid, Paving...158
- City's Right to Relet Abandoned Public Works .....361
- Date of Final Settlement of Government .....446
- Entered Into Through Mutual Mistake, Cancellation of Road .....282
- Financing of Road .....446
- For Embankment Work, Erroneous Method of Estimating Damages for Breach of ...404
- For Failure to Make Contract Payments, Abandonment of...362
- For Sewage Disposal Plant, Recovery for Extra Work Under .....157
- Loss of Profits from Repudiation of Construction .....362
- Materialman's Claim on Contractor's Estate Apart from...446
- Modification of District Engineer's .....362
- Not Vitiated by Increase of Engineer's Estimate Not Known to Contractor, Sewer...196
- Roadmaster's Discretion as to the Order of Grading Under .....195
- To Deliver Rock Refused where Mutual Mistake Not Shown, Reformation of ... 41
- Work Done Under Void Road Construction .....361
- Contractor and Subcontractor, Construction of Road Contract as Between ..... 41
- And Subcontractor Under Their Contract, Engineer's Acceptance of Road Construction Work Binding as Between ..... 41
- Held Insufficient, Counterclaim for Delay in Furnishing Materials to .....158
- Not Relieved from Liability for Unguarded Excavation Because County Employing Him Would Not Have Been Liable, Road ..... 42
- Contractor's Account, Date of Final Settlement of Public Works...362
- Action Against State, Federal Court's Jurisdiction of Highway .....362
- Bond Does Not Cover Money Loaned to a Subcontractor to Pay for Material or Labor, Mississippi Public Works.....41
- Bonds, Law Governing Public Works .....361
- Bond, Oil and Gasoline for Machinery Used in Digging Canals and Ditches within Statute as to ..... 44
- Bond where Statute Specifically Includes Fuel, Gasoline and Oil Covered by Public Works ..... 41
- Duty to Guard Excavations at Night, Road ..... 42
- Warrants Issued on Less Than Par Value Basis .....403
- Contributory Negligence in Use of Sidewalk in Daytime .....281
- of Pedestrian in Stepping on Exposed Gas Pipe in Street...404
- Damage from Casting Sand and Dirt on Plaintiff's Property...196
- Damages for Breach of Contract for Embankment Work, Erroneous Method of Estimating...404
- For Destruction of Building Torn Down by City After Condemnation Proceedings, Held Not Recoverable by Subsequent Purchases ..... 43
- Dedicated Street Not Abandoned by Paving Only Part, Balance of ..... 42
- Dedication, City's Right of Condemnation for Fire Stations Not Affected by Restrictions in... 44
- Default of Conditional Purchase Can Compel Delivery of Water Until Pipe Is Paid for, Neither Vendor of Property Nor His Tenant After .....157
- Delay in Furnishing Materials to Contractor Held Insufficient, Counterclaim for .....158
- In Paying Wages, Recovery by Contractor's Laborer for Attorney's Fee in Action for...279
- Detour with Highway, Barrier Held Not Required at Junction of...195
- Discretion of Municipality, Quality of Pavement, Manner of Doing Work and Time Therefor Within .....239
- Drainage System for Surface Water Becoming Inadequate, Municipality May Be Liable for...282
- Dredging Company's Right to Recover Profits Under Contract with Contractors .....280
- Dues Based on Percentage of Public Works Contracts Held Invalid, Association By-Law Requiring .....240
- Easement for City Sewage, Creation by Landowner of .....157
- Elimination of Part of Work After Receipt of Bids .....279
- Employee, City Held Not Liable for Negligence of Public Park...282
- Public Works Contractor Held, Under Contract, Not Employer of Subcontractor's...280
- Encroachment Ordinance, Filling Station Gas Arm Not a Violation of an .....195
- Engineer's Acceptance of Road Construction Work Binding as Between Contractor and Subcontractor Under Their Contract ..... 41
- Claim Against Improvement District, Conclusiveness of Decree for Highway ..... 42
- Contract, Modification of District .....362
- Engineers During Work, Measurement of Road Construction Contract—Change of .....403
- Equipment Held Entitled to Share of Fund Retained by State Highway Commission, Furnishers of Lumber for Temporary Buildings and Renters of Railway .....158
- On Bond Under Oklahoma Statute, No Recovery Allowed for Partial Wear of Contractor's .....281
- Estimate Not Known to Contractor, Sewer Contract Not Vitiated by Increase of Engineer's...196
- Excavation Because County Employing Him Would Not Have Been Liable, Road Contractor Not Relieved from Liability for Unguarded ..... 42
- Excavations at Night, Road Contractor's Duty to Guard ... 42
- Extra Compensation to Contractors, State Constitution Provision Prohibiting .....279
- Concrete Work Required as Foundation of Street Railway Tracks, Liability for...279
- Work Under Contract for Sewage Disposal Plant, Recovery for .....157
- Federal Court's Jurisdiction of Highway Contractor's Action...362
- Feed Supplied to Grading Contractor Held Covered by His Bond, Animal .....362
- Filling Station Gas Arm Not a Violation of an Encroachment Ordinance .....195
- Filling Stations Near Churches, etc., Construction of Ordinance Prohibiting ..... 43
- Financing by City of Elevation of Railroad Tracks Held Unauthorized Aid to Railway Company .....158
- Financing of Road Contract .....446
- Franchise Contract with Public Utility Requiring Payment of Percentage of Gross Receipts Held Valid .....157
- Garage for Repairing City Automobiles Held a Proprietary Function, Maintenance of... 43
- Garbage Disposal Plant, Authority to Operate .....404
- Grade, Where Property Is Benefited by Change of .....446
- Gravel Previous Contractor's Work, Highway Contractor Not Required to .....403
- Guard Rail for Embankment, Grading Contractor Held, Under Contract, Not Liable for Failure to Provide .....280
- Hardpan Not Covered by Contract, Contractor's Right to Recover for Removal of .....280
- Highway Under Repair, County's Duty as to Safety of .....404
- Hitching Rack from County Square Under Its Control, City Held Judge of Necessity for Removal of .....158
- Improvement Justifying Special Assessment, Bridge over Creek Held Not a Local ..... 42
- Injunction Against Public Playground Must Show Special Damage, Adjacent Owners Seeking .....240
- Injury to Employee Not Covered by Government Contractor's Bond .....361
- Inspection of Private Sewer Systems by Board of Health Held Proper, Permit for and ... 43
- Invalid Purchase of Merchandise by City Officials ..... 43
- Irregularity of Procedure, Paving Bonds Held Valid Notwithstanding .....445
- Liable to Lower Riparian Owner for Destruction of Business, Municipality Polluting Stream by Sewage Held ..... 44
- Liable to Materialman for Failure to Require Statutory Contractor's Bond, Municipality Held Not .....404
- Liability for Damage by Blasting, Contractor's .....446
- Of Municipalities Supplying Public Utilities .....239
- Of Principal Contractor to Sub-Contractor's Employee...240
- Liable for Accident in Park Swimming Pool, Municipality Held Not .....240
- For Drainage System for Surface Water Becoming Inadequate, Municipality May Be...282
- For Failure to Provide Guard Rail for Embankment, Grading Contractor Held, Under Contract, Not .....280
- For Injury to Telephone Line in Absence of Negligence, Road Contractor Held Not...282
- For Negligence of Public Park Employee, City Held Not...282
- Licenses, Discretion of City Officials to Issue Retail Dealers' ... 44
- Lien Against Money Due Contractor for Materials Supplied Subcontractor, Although Subcontractor Paid in Full .....282
- Light Plant Held One Public Utility, Municipal Waterworks and .....281
- Lumber for Temporary Buildings and Renters of Railway Equipment Held Entitled to Share of Fund Retained by State Highway Commission, Furnishers of .....158
- Master and Servant Does Not Exist Between Contractor and Subcontractor Who Is an "Independent Contractor," Relationship of .....240
- Material or Labor, Mississippi Public Works Contractor's Bond

Does Not Cover Money Loaned to a Subcontractor to Pay for Materialman's Claim on Contractor's Estate Apart from Contract .....	41	With Bank Becoming Insolvent Not a Preference to Resident Bidders as to Amount of Bids Held Improper .....	281	tractor Paid in Full, Lien Against Money Due Contractor for Materials Supplied .....	282
Duty to See that Statute as to Public Works Contractors Bond Is Complied with .....	196	Premium Held to Cover Period of Road Contract Under Terms of Application for Bond, One Private Purpose, Village Property Cannot Be Given for .....	43	Subcontractor, Construction of Road Contract as Between Contractor and .....	41
Remedy Where Government Contractor Fails to Give Bond Is Action for Damages for Breach of Promise to Give Bond .....	445	Profits Under Contract With Contractors, Dredging Company's Right to Recover .....	280	Subcontractor on Public Works, Statute and Bond Covering Claims of Material Men Furnishing Material to .....	239
Right of Recovery on Public Contractor's Bond .....	280	Property Cannot Be Given for Private Purpose, Village .....	239	Subcontractor on Road Work Held Entitled to Protection of Road Contractor's Statutory Bond .....	279
Right to Indemnity Under Public Works Bonds .....	404	Protection Against Animals Running at Large in Violation of Stock Law, Pipe Trench Does Not Require .....	281	Subcontractor to Pay for Material or Labor, Mississippi Public Works Contractor's Bond Does Not Cover Money Loaned to a Subcontractor Under Their Contract .....	41
Right to Sue on Contractor's Bond on City's Failure to Do So .....	157	Public Utility Requiring Payment of Percentage of Gross Receipts Held Valid, Franchise Contract with .....	157	Subcontractor Under Their Contract Engineer's Acceptance of Road Construction Work Binding as Between Contractor and .....	41
Material-Men Furnishing Material to Sub-Contractor on Public Works, Statute and Bond Covering Claims of .....	239	Purchase of Merchandise by City Officials, Invalid .....	43	Subcontractor Who is an "Independent Contractor," Relationship of Master and Servant Does Not Exist Between Contractor and a .....	240
Materials and Labor Covered by Highway Contractor's Bonds. Supplied Subcontractor, Altho Sub-Contractor Paid in Full, Lien Against Money Due Contractor for .....	282	Railway Company, Financing By City of Elevation of Railroad Tracks Held Unauthorized Aid to .....	158	Subcontractor's Employee, Liability of Principal Contractor to .....	240
Measurement of Road Construction Contract—Change of Engineers During Work .....	403	Recall of Petition for Road District Held Too Late .....	41	Subcontractor's Employee, Public Works Contractor Held, Under Contract, Not Employer of .....	280
Missouri Statute as to Opening of Roads Between Two Counties Held Mandatory .....	41	Recovery By Contractor's Laborer for Attorney's Fee in Action For Delay in Paying Wages .....	279	Surety, Alteration of Road Contract Not Releasing .....	446
Municipality, Contract and Property Rights of Railroad in Street Subject to Reasonable Regulation by .....	44	Regulation by Municipality, Contract and Property Rights of Railroad in Street Subject to Reasonable .....	44	Swimming Pool, Municipality Held Not Liable for Accident in Park .....	240
Maintaining Electric Light System Held Liable for Negligence .....	196	Relet Abandoned Public Works Contract, City's Right to .....	361	Telephone Line in Absence of Negligence, Road Contractor Held Not Liable to Injury to .....	282
Negligence in Use of Sidewalk in Daytime, Contributory .....	281	Rental of Concrete Mixer and Other Machinery Used in Road Construction Held Not Within Contractor's Bond .....	158	Time Limits, Waiver by Public Contractor and Subcontractor of .....	279
Negligence, Municipality Maintaining Electric Light System Held Liable for .....	196	Repair, Acceptance of Sewer System Did Not Release Parties from Obligation Under Contract and Bond to Keep in .....	282	Title to Road Machine Sold on Approval, Passing of .....	445
Of Public Park Employee, City Held Not Liable for .....	282	Repair, County's Duty as to Safety of Highway Under .....	404	Traffic Regulators Held Not Subject to Injunction by Private Citizen, Advertising on .....	157
Of State in Repairing Road Not Shown .....	362	Repair of Streets Opened by City for Sewer Pipes Held Payable by Street Railway Under Ordinance .....	44	Trench Does Not Require Protection Against Animals Running at Large in Violation of Stock Law, Pipe .....	281
Road Contractor Held Not Liable for Injury to Telephone Line in Absence of .....	282	Repudiation of Construction Contract, Loss of Profits From .....	362	Unguarded Stone Heap—Sufficiency of Warning .....	195
Nonpayment, Breach of Contract by .....	403	Restricting Transfer Business at Railway Stations Held Discriminatory, Ordinance .....	43	Village Consisting Almost Entirely of Agricultural Land Held Illegal, Incorporated .....	158
Obligation on Municipality Retaining Control of Street Under Construction .....	239	Right of Way, Legally Established Road Partly on Railroad .....	282	Voiding Paving Contract, Agreement with Bidders .....	43
Ordinance and Bidding Required for Public Work Above Specified Amount .....	44	Riparian Owner for Destruction of Business, Municipality Polluting Stream by Sewage Held Liable to Lower .....	44	Vold Road Construction Contract, Work Done Under .....	361
Ordinance Prohibiting Filling Stations Near Churches, etc., Construction of .....	43	Roadmaster's Discretion as to the Order of Grading Under Contract .....	195	Wages, Recovery by Contractor's Laborer for Attorney's Fee in Action for Delay in Paying .....	279
Ordinance, Repair of Streets Opened by City for Sewer Pipes Held Payable by Street Railway Under .....	44	Road Construction Contract—Change of Engineers During Work, Measurement of .....	403	Waiver By Public Contractor and Subcontractor of Time Limits .....	279
Ordinance Restricting Transfer Business at Railway Stations Held Discriminatory .....	43	Road Contract as Between Contractor and Subcontractor, Construction of .....	41	Waiver of Building Permit Requirements .....	361
Park Lands May Be Put, Uses to Which .....	403	Road, Method of Assessing Railroad Property for Hard Surfaced .....	44	Warning, Unguarded Stone Heap—Sufficiency of .....	195
Parks, Buildings in Public .....	281	Road Over Land Held Under Government Patent, Compensation for Opening .....	42	Warrants Issued on Less Than Par Value Basis, Contractors' .....	403
Partnership, Agreement to Furnish Capital to Contractor Does Not Constitute a .....	195	Roads Between Two Counties Held Mandatory, Missouri .....	41	Warrants, Validity of Paving .....	361
Payment, Manner and Doing Work and Time Therefor Within Discretion of Municipality, Quality of .....	239	Route for Hard Surfacing of Road Approved by Commissioners Cannot be Changed on New Petition .....	196	Water Until Pipe Is Paid for Neither Vendor of Property Nor His Tenant After Default of Conditional Purchase Can Compel Delivery of .....	157
Payments, Abandonment of Contract for Failure to Make .....	362	Settlement of Government Contract, Date of Final .....	446	Waterworks and Light Plant Held One Public Utility, Municipal .....	281
Pedestrian in Stepping on Exposed Gas Pipe in Street, Contributory Negligence of .....	404	Settlement of Public Works Contractor's Account, Date of Final .....	362	Widening Street, Unreasonable Imposition of Cost of .....	196
Permit for and Inspection of Private Sewer Systems by Board of Health Held Proper .....	43	Sewage, Creation by Landowner of Easement for City .....	157		
Petition for Road District Held too Late, Recall of .....	41	Sewage Held Liable to Lower Riparian Owner for Destruction of Business, Municipality Polluting Stream by .....	44		
Petition, Route for Hard Surfacing of Road Approved by Commissioners Cannot be Changed on New .....	196	Sewer Plans and Specifications for Information of Bidders, Sufficiency of .....	43		
Plans and Specifications for Information of Bidders, Sufficiency of Sewer .....	43	Sewer Systems by Board of Health Held Proper, Permit for and Inspection of Private .....	43		
Plat by Owner, Necessity for Acceptance of Streets, etc., Laid off on .....	240	Specifications for Information of Bidders, Sufficiency of Sewer Plans and .....	43		
Playground Must Show Special Damage, Adjacent Owners Seeking Injunction Against Public .....	240	Specifications Held Entitled to Refuse Delivery and Recover Damages, Buyer of Gravel not Conforming to .....	41		
Polluting Stream by Sewage Held Liable to Lower Riparian Owner for Destruction of Business, Municipality .....	44	Stream By Sewage Held Liable to Lower Riparian Owner for Destruction of Business, Municipality Polluting .....	44		
Preferred Claim, Proceeds of County Road Bonds Deposited		Street Under Construction, Obligation on Municipality Retaining Control of .....	239		
		Subcontract, Evidence of Amount of Work Removed Under .....	195		
		Subcontractor, Although Subcon-			

## AUTHORS

Baldwin, Frank O. and Donaldson W.—Water Purification in Richmond .....	241
Baum, H. J.—Heaving Concrete in Altoona .....	88
Blew, Michael J.—The Merchantville-Pensauken Sewage Treatment Plant .....	409, 468
Brockway, P. L.—Subsoil Experiences .....	83
Bouchard, David D.—Systematic Photographic Records of Public Work .....	141
—Keeping Rhode Island Roads Open in Winter .....	464
Burdick, Chas. E.—Irrigation with Denver Sewage .....	90
Burton, V. R.—Fill Settlement in Peat Marshes .....	172
—Research Activities of the Michigan State Highway Dept. .....	30
Buswell, A. M. and Elder, A. L.—Ventilation in Trickling Filters .....	154
Clapp, Geo. E.—Shepaug Tunnel, Waterbury Waterworks .....	295
Clement, L. L.—Construction and Maintenance of Gravel Roads in Iowa .....	7
Cleveland, H. Burdett—Future Pumping Station Used for Sewage Treatment .....	373
Corson, S. Cameron—Road Main-	



Cottingham, W. P.—Salvaging Pavements in Gary .....	146
Cox, Glen N.—Design of Mixing Channel Having Small Loss of Head .....	426
Doe, Nelson L.—Methods of Distributing Concrete .....	350
Donaldson, W. and Baldwin, Frank O.—Water Purification at Richmond .....	241
Donohue, Jerry—Separate Sludge Digestion in Wisconsin .....	124
Downes, John R.—Sewage Plant Records .....	342
Duff, Raymond E.—Financing Public Improvements by Special Assessments .....	420
Duxbury, S.—Wet Sludge as Fertilizer .....	374
Eddy, A. J.—Cost Accounting on Street Maintenance .....	268
Elder, A. L. and Buswell, A. M.—Ventilation in Trickling Filters .....	154
Emmons, W. J.—Researches on Bituminous Paving Mixtures .....	66
Fairbanks, H. S.—Current Research Projects of the U. S. Bureau of Public Roads .....	64
Fales, Almon L.—Sewage Treatment for North Toronto .....	135
Finnie, Thos.—Heaving of Yellow Clay Subsoil .....	85
Fisher, Edwin A.—Pavement Design in Relation to Traffic .....	103
Franklin, Geo. E.—Asphalt Concrete on Caliche Base .....	177
Grimley, K. W.—Modern Pumping Station for Bessemer .....	291
—Relation of Toilet Type to Typhoid Prevalence .....	425
Grumm, Fred J.—California Engineer's Invention for Cross-Sectioning .....	175
Hall, W. C.—Water Department Accounting Methods .....	142
Hampsch, O. H.—Tabulation of Bids .....	376
Hanmer, H. J.—Underdrainage of Pavements in Gloversville, N. Y. ....	89
Hansen, Paul—Coordination of Sewage Disposal and Water Purification .....	149
—Lining and Covering Quincy Reservoir .....	53
Harvey, E. W.—Electrical Pumping Equipment for Kansas City .....	207
Hatfield, William D.—Imhoff Tank Gases and Odors .....	204
Hay, W. M.—Sub-base at DeKalb, Ill. ....	86
Heukelekian, H.—Distribution of Cellulose in Imhoff Tanks .....	133
—Digestion of Sewage Screenings .....	455
Hiteshew, John C.—Garbage Collection and Incineration in Sewickley .....	11
Houk, Ivan E.—Temperatures in Denver Reservoirs .....	405
Kepner, Dana E.—Public Water Supplies in Colorado .....	168
Limerick, R. C.—Road Construction and Maintenance in Arkansas .....	6
Mabee, W. C.—Concrete Control .....	121
Mahlie, W. S.—Sewage Chlorination at Fort Worth .....	264
McClintock, Miller—How to Make a Traffic Survey .....	163
McKay, J. G.—Modern Highway Traffic and the Planning of State Highway Systems .....	177
Miller, John O.—Laying Water-Tight Sewer in Swamp .....	372
Moorefield, Chas. H.—Sand-Clay Roads in South Carolina .....	8
Neeson, J. H.—The Pavement Base Situation .....	247
Newson, C. C.—Surface Treatment of Gravel and Stone Roads .....	261
Nuebling, Emil L.—Lead, Wrought Iron and Copper Goose Necks .....	259
Nye, F. H. A.—Winter Construction of Concrete Bridge .....	271
Polglaze, R. A.—"Water Dogs" in a City Water Supply .....	97
Potter, Alexander—Size and Material for House Connections .....	206
Powell, S. T.—Operating Rapid Sand Filters .....	266
Rankin, Edward S.—Joint Outlet Sewer in New Jersey .....	72
Roessler, L. W.—Scarifying Sub-grade Desirable .....	176
Root, W. H.—Road Maintenance Equipment .....	139
Rosengarten, Walter E.—Asphalt Maintenance without Recourse to Large Plants .....	99

Rudolfs, Willem—Improving Sewage Sludge Digestion .....	19
—Recent Results from Separate Sludge Digestion Experiments .....	50
Rudolfs, W. and Zeller, P. J. A.—Digestion of Activated Sludge .....	253
Schneider, C.—Street Cleaning in New Orleans .....	388
Serkes, Meyer—Uses of Pitometer in St. Louis .....	17
Sherwood, Nial—A Rush Paving Job .....	414
Simpson, John—Assessment of Cost of Paving Intersections .....	355
—Assessment of Cost of Paving Street Intersections .....	306
Spencer, C. R.—Subsoil Drainage at Zanesville .....	87
Steinberg, S. S.—Open Roads for Winter Traffic .....	144
Stewart, E. P.—Water Waste Investigation in Syracuse .....	73
Stivers, A. D.—Surface Treatment of Dallas Co. Roads .....	40
Taylor, Walter H.—Garbage Collection in Norfolk .....	246
Terrell, D. V.—Cement Factor .....	215
Thomas, C. H.—The "Berkeley Mix" for Patching Asphalt Pavements .....	32
Thompson, G. R.—Down-Town Street Cleaning in Detroit .....	45
Watson, Robt. M.—Subsoil Troubles in Rutherford .....	87
Weir, W. H.—Sanitary Engineering Problems of the Mississippi Flood .....	288
Weyher, John E.—New Water Supply of Kingston, N. C. ....	93
Williams, D. M.—Durham's New Water Works .....	197
Witherspoon, H. K.—Building Roads with Gasoline .....	181
Withycombe, E.—Use of Vialog on California Highways .....	138
Zeller, P. J. A. and Rudolfs, Willem.—Digestion of Activated Sludge .....	253

## NEW APPLIANCES

A. B. C. Asphalt Brick .....	Dec.
Agitator, Dorr Impeller .....	Dec.
Acker Core Drills .....	Dec.
Agrabatcher, Heltzel .....	Feb.
Air-Driven Hand Saw—Ingersoll-Rand Co. ....	May
Air-Made Wells, Sullivan .....	Dec.
American Fin-Mix Co., Rotary Pressure Asphalt Mixer .....	June
American Pressed Steel Co., Never-slip Traffic Plates .....	July
American Reinforced Paper Co.—Sisalkraft .....	Sept.
American Steel & Wire Co. ....	May
American Well Works—Non-Clogging Centrifugal Pump .....	Apr.
Andrews Self-Loading and Elevating Plant .....	May
Arch Tile, Reintjes Flexible .....	Apr.
Arkell Safety Bag Co.—ArkSAFE Linings .....	Mar.
ArkSAFE Linings—Arkell Safety Bag Co. ....	Mar.
Armored Bumper for "Caterpillar" Sixty .....	Apr.
Athey Truss Wheels .....	Dec.
Attachment, Western Motor Grader Austin-Western Road Machine Co. ....	June
Austin-Western Road Machinery Co.—Western Motor Grading Attachment .....	June
Austin-Western Telescopic Axle Leaning Wheel Grader .....	Aug.
Automatic Alternator for Pumps—Chicago Pump Co. ....	Mar.
Automatic Cone Check Valve .....	Oct.
Avery Power Maintainer .....	May
Backfiller, New Harnischfeger—Harnischfeger Corp. ....	Apr.
Baker Kicker—Baker Steel and Machinery Co. ....	May
Banner Steel Posts for Signs—American Steel & Wire Co. ....	May
Barrett Co., New York City Protector for Concrete .....	June
Bay City Tractor Shovel, Trench Attachment for .....	June
Belt Conveyor Idler—Link Belt Co. ....	Aug.
Bin, Heltzel Mystery .....	Apr.
Bins, Butler Steel Storage .....	Nov.
Blaw-Knox Junior Inundator .....	July
Blaw-Knox Portable Turntable .....	June
Bodies, for Chevrolet Trucks, Eagle .....	July
Bottom-Dump Trailer, Miami .....	Feb.
Brick, A. B. C. Asphalt .....	Dec.
Brown and Brown, Inc.—Locking Manhole Covers .....	Apr.
Brown Electric Flow Meters .....	June
Builder, Model 111—A Indiana Road .....	Aug.

Bumper for "Caterpillar" Sixty, Armored .....	Apr.
Butler Steel Storage Bins .....	Nov.
Caldwell Speed Reducer .....	July
Case Industrial Tractor—J. I. Case T. M. Co. ....	Nov.
Caterpillar Tractor Co.—Armored Bumper for "Caterpillar" Sixty .....	Apr.
Central Floor Plates .....	Sept.
Chain Drive International, New .....	Apr.
Chausse Oil Asphalt Repair Plant—Chausse Oil Burner Co. ....	Apr.
Chicago Pump Co., Chicago—Automatic Alternator for Pumps .....	Mar.
Chip Spreadr, Goroco .....	Feb.
Clamshell, Haiss Hi-Power .....	May
Clarifier, Dorr Traction .....	Aug.
Coffin Valve Co.—Electric Operation of Valves .....	Feb.
Comparator, Enslow Chlorine—La Motte Chemical Products Co. ....	June
Compressor-Pump Outfit, Ingersoll-Rand Portable .....	Apr.
Compressors, National Air .....	Nov.
Continental Prod. Co., Euclid-Zone Painting Machine .....	Feb.
Conveyor, Harnischfeger .....	May
Core Drills, Acker .....	Dec.
Cramer & Co., R. W., Inc.—Kern Level II .....	June
Cramer & Co., R. W., Inc.—Sauter Electric Time Switches .....	Oct.
Crane, Rix Truck .....	Aug.
Crawler, Universal Crane Motor Truck .....	June
Dallas Brass & Copper Co.—Dowel Sockets .....	June
58 Dandle Speedster, Koehring .....	June
Deister Concentrator Co.—Leahy Vibrating Screen .....	Feb.
Diaphragm for Power Pumps, A New—Edson Mfg. Corp. ....	June
Diesel Engine, The Foos .....	Jan.
Digger, North Hydraulic—Blair Mfg. Co. ....	Oct.
Dipper Trip, Koehring .....	Feb.
Dorr Impeller Agitator .....	Dec.
Dorr Traction Clarifier—Dorr Co. ....	Aug.
Dorco Bar Screen—Dorr Co. ....	July
Dragline Excavators, Improvement for—Koehring Co. ....	Jan.
Drifter, Sullivan T-3, Water .....	Dec.
Drills, Acker Core .....	Dec.
Drills, Five New Sullivan .....	Aug.
Drills, Sullivan Diamond .....	Apr.
Durex Pumps .....	Dec.
Eagle Bodies for Chevrolet Trucks .....	July
Edson Mfg. Corp., Boston—A New Diaphragm for Power Pumps .....	June
Edwards Rotary Snow Plow—O. L. Edwards Mfg. Co., Inc. ....	Mar.
Electric Operation of Valves—Coffin Valve Co. ....	Feb.
Elevator, O. K. Portable .....	Sept.
Engine, in Graham Bros. Truck, New .....	July
Erie Gasoline Rollers .....	May
Essco Mfg. Co., Peoria—"Seethru" Signs .....	Mar.
Euclid Scraper and Trailer—Euclid Crane & Hoist Co. ....	Feb.
Excavator, General, The .....	June
Excavator, Harnischfeger, Light .....	Mar.
Excavator Improvements, Insley .....	Mar.
Fitzgerald, Thos. Co—"Savpav" Pouring Kettle .....	Jan.
Flexible Road Joints—Flexible Road Joint Machine Co. ....	Mar.
"Fluid-Oil D" Pumps, Novo .....	Apr.
Foos Diesel Engine, The—Foos Gas Engine Co. ....	Jan.
Foot 6-Cylinder Paver .....	June
Forms, Carr Road—Lakewood Engineering Co. ....	June
Forms, Metal Manhole Forms Corp. ....	June
Fox Tool Heater—Fox Tool Heater .....	Aug.
Frink "Sno-Flows" .....	Oct.
Fuel Filter, Zenith .....	Mar.
Full-Crawler, New Model—Full Crawler Co. ....	Feb.
Fundom Shovel, The—Fundom Hoist and Shovel Co. ....	Jan.
Gallon Car Puller .....	Dec.
Gallon Cletrac Grader .....	Sept.
Garford 30 Truck, The .....	Mar.
General Electric Co.—Electric Signal Panel .....	July
General Electric Co.—New Traffic Signal Mechanism Boxes .....	Sept.
General Electric Co.—Small Electric Melting Pot .....	Oct.
General Excavator, The .....	June
Godwin, W. S., Co., Inc.—Steel Paving Guards .....	Apr.
Good Roads Co., Inc.—Goroco Chip Spreader .....	Feb.
Goroco Chip Spreader—Good Roads Co., Inc. ....	Feb.
Grader, Austin-Western Telescopic Axle Leaning Wheel .....	Aug.
Grader, Gallon Cletrac .....	Sept.
Grader, Rome .....	Jan.
Grading Machine, Ryan .....	Feb.

Graham Bros. Motor Trucks.....Oct.	Locking Manhole Covers—Brown & Brown, Inc. ....Apr.	Sharpener, Sullivan Light Drill—Sullivan Machinery Co.....Mar.
Graham Bros. Truck, New Engine in .....July	Lufkin Improved Tape Hook.....Nov.	Shovel, A New Thew—Thew Shovel Co. ....Apr.
Guards, Steel Pavings.....Apr.	Maintainer, Avery Power.....May	Shovel, New Type of Thew Pull.....Oct.
Gurley Lightweight Transit.....June	Manhole Cover, Locking.....Apr.	Shovel, The Fundom.....Jan.
Haiss Hi-Power Clamshell.....May	Marsh-Capron Mixer, New.....June	Shovels, Zenith .....Feb.
Haiss Snow Loader.....Jan.	Meadows, W. R., Inc.—Sealtight Expansion Joints.....June	Signs, Banner Steel Posts for—American Steel & Wire Co.....May
Handsaw, Wallace Portable Electric.....July	Metal Manhole Forms.....June	Signs, "See thru"—Essco Mfg. Co., Mar. Signal Mechanism Boxes, New Traffic—General Electric Co.....Sept.
Harnischfeger Backfiller, New.....Apr.	Metalrut Co.—Metalrut for Impassable Roads.....Nov.	Signals, Harrington-Seaberg Traffic Oct. Simons Paint Spray Brush.....Dec.
Harnischfeger Conveyor.....May	Metalrut for Impassable Roads.....Nov.	Simplex Trench Brace Fitting—Templeton, Kenly & Co., Ltd. ....Sept.
Harnischfeger Light Excavator.....Mar.	Meters, Brown Electric Flow.....June	Siphon, Sumter Super.....Apr.
Harrington-Seaberg Traffic Signals.....Oct.	Meters, Sparling Main Line.....June	Signal—American Reinforced Paper Co. ....Sept.
Heater, Fox Tool.....Aug.	Miami Bottom Dump Trailer—Miami Trailer-Scraper Co.....Feb.	"Skip Shaker" and Mixers, Jaeger Apr. "Sno-Plows" Frink.....Oct.
Heater, Rubber Tired High Speed Asphalt—Mohawk Asphalt Heater.....Sept.	Miami Power Scraper with Cletrac Tractor.....Nov.	Snow Fighters, Walter.....Aug.
Heltzel Agrabatcher—Heltzel Steel Form & Iron Co.....Feb.	Miami Scraper.....Sept.	Snow Loader, The Haiss.....Jan.
Heltzel Mystery Bin—Heltzel Steel Form & Iron Co.....Apr.	Mixer, Jaeger 7s "Speed King".....Sept.	Snow Plow, Edwards Rotary—C. L. Edwards Mfg. Co.....Mar.
Heltzel Steel Form & Iron Co.—Joint Pouring Machine.....May	Mixer, Lakewood Worm Speed Reduction.....July	Snow Plow, The Wausau Senior.....Mar.
Highland Rocker Sill Truck Cab Mounting.....Sept.	Mixer, New Marsh-Capron.....June	Sockets, Dowel—Dallas Brass & Copper Co. ....June
Hitches for Tractors and Trucks, Semi-Trailer.....Nov.	Mixer, Rotary Pressure Asphalt—American Fin-Mix Co.....June	Softener Water for Homes—Ward-Love Pump Co.....June
Hoe, Universal Trench—Universal Crane Co. ....Apr.	Mixers and "Skip Shaker," Jaeger Apr. Model 111-A—Indiana Road Builder.....Aug.	Sparling Main Line Meters.....June
Hoist and Compressor, Novo Combination.....July	Mohawk Asphalt Heater Co.—Rubber Tired High Speed Asphalt Heater.....Sept.	Speed Reducer, Caldwell.....July
Hook, Lufkin Improved Tape.....Nov.	Monarch Model "H" Tractor.....June	Speedster, Koehring 58 Dandle.....June
Horn's "No-Freeze"—A. C. Horn Co. ....Mar.	Morris Machine Works—Non-Clogging Sewage Pumps.....Nov.	Squier-Rix Co.—Rix Truck Crane Aug. Stump Puller, Wester and Boone.....Dec.
Huber 5-Ton Roller—Huber Mfg. Co. ....Jan.	Mystery Bin, Heltzel.....Apr.	Sullivan Co.—Konset.....Feb.
Huber Industrial Tractor.....Aug.	National Air Compressors.....Nov.	Sullivan Air-Made Wells.....Dec.
Huber Motor Roller—Huber Mfg. Co. ....Oct.	New Model Full Crawler.....Feb.	Sullivan Diamond Drills—Sullivan Machinery Co. ....Apr.
Idler, Belt Conveyor.....Aug.	"No-Freeze," Horn's.....Mar.	Sullivan T-3 Water Drifter.....Dec.
Improvement for Dragline Excavators—Koehring Co. ....Jan.	Non-Clogging Centrifugal Pump.....Apr.	Sullivan Drills, Five New—Sullivan Machinery Co. ....Aug.
Incinerator, U. S. Standard Garbage—Pittsburg Des Moines Steel Co. ....May	Non-Clogging Sewage Pumps—Morris Machine Works.....Nov.	Sullivan Light Drill Sharpener—Sullivan Machinery Co.....Mar.
Indiana Motor Truck Pole Setter.....Sept.	Novo Combination Hoist and Compressor.....July	Sumter Super-Siphon—Sanitation Corp. ....Apr.
Indiana Road Builder, Model 111-A—Indiana Truck Corp. ....Aug.	Novo "Fluid-Oil-D" Pumps—Novo Engine Co. ....Apr.	Super Woodworker—Jones Superior Machine Co.....Mar.
Ingersoll-Rand Co., New York City—Air-Driven Hand Saw.....May	O. K. Portable Elevator.....Sept.	Switches, Sauter Electric Time—Cramer, R. W. Co.....Oct.
Ingersoll-Rand Co., New York City—New Concrete Surfacing Tool.....Oct.	Oxweld Acetylene Co.—Wagner Pipe Cutter.....Sept.	Talbot Flood Mfg. Co.—Tal-Flo Mixer The.....Mar.
Ingersoll-Rand Co., New York—New Leyner Drill Steel Sharpener.....Sept.	Paint Spray Brush, Simons.....Dec.	Tal-Flo Mixer The—Talbot Flood Mfg. Co.....Mar.
Ingersoll-Rand Portable Compressor-Pump Outfit—Ingersoll-Rand Co. ....Apr.	Panel, Electric Signal.....July	Tanks Super-Septic.....Dec.
Insley Excavator Improvements—Insley Mfg. Co. ....Mar.	Patrol, Russell Motor.....May	Templeton, Kenly & Co., Ltd.—Simplex Trench Brace Fitting.....Sept.
Intake Screens, Link-Belt "Clean Water".....Sept.	Paver, Foote 6-Cylinder.....June	Thew Shovel, A New.....Apr.
International Harvester Co., Chicago—New Chain Drive Internationals.....Apr.	Pipe, Rapid Drainage—Walker Cement Products.....Aug.	Thew Shovel Co. Lorain Ohio—New Type of Thew Pull Shovel.....Oct.
Internationals, New Chain Drive.....Apr.	Pittsburgh Des Moines Steel Co.—United States Standard Garbage Incinerator.....May	Three-Ton Indiana Truck—Ind Truck Corp. ....Jan.
Inundator, Blaw-Knox Junior.....July	Plates, Central Floor.....Sept.	Tool, New Concrete Surfacing—Ingersoll-Rand.....Oct.
Irving Unified Reinforcement.....Dec.	Plates, Neverslip Traffic—American Pressed Steel Co.....July	Tractor, Case Industrial.....Nov.
Jack for Finishing Machine, New Lakewood Engineering Co.....Oct.	Plows, La Plant-Choate Snow.....Oct.	Tractor, Huber Industrial—Huber Mfg. Co. ....Aug.
Jaeger 7s "Speed King" Mixer.....Sept.	Pot, Small Electric Melting.....Oct.	Tractor, Linn.....Apr.
Jaeger "Skip Shaker" and Mixers—Jaeger Machine Co.....Apr.	Pouring Kettle "Savpav"—Thos. Fitzgerald Co.....Jan.	Tractor, Monarch Model "H".....June
Joint Pouring Machine—Heltzel Steel Form & Iron Co.....May	Pouring Machine, Joint—Heltzel Steel Form & Iron Co.....May	Trailer and Scraper.....Feb.
Joints, Flexible Road.....Mar.	Protector for Concrete—Barrett Co. ....June	Trail-It Co., The, St. Paul, Minn.—Semi-Trailer Hitches for Tractors and Trucks.....Nov.
Joints, Sealtight Expansion—Meadows, W. R., Inc.....June	Puller, Gallon Car.....Dec.	Transit, Gurley Lightweight.....June
Jones Superior Machine Co.—Super Woodworker.....Mar.	Puller, Wester & Boone Stump.....Dec.	Traylor Vibrator Screen, The.....June
Kern Level II—Cramer & Co., R. W., Inc.....June	Pump, Non-Clogging Centrifugal—American Well Works.....Apr.	Trench Attachment, for Bay City Tractor Shovel.....June
Kettle for Road Work, Oil Burning Littleford Bros.....Sept.	Pumps, Automatic Alternator for Mar. Pumps, Durex.....Dec.	Trench Hoe, Universal.....Apr.
Kettle, Littleford Oil-Burning.....Apr.	Pumps, Non-Clogging Sewage—Morris Machine Works.....Nov.	Truck Cab Mounting, Highland Rocker Sill.....Sept.
Kicker, Baker.....May	Pumps, Novo "Fluid-Oil-D".....Apr.	Truck, Relay Axle-Drive Motor.....May
Killefer Road Discs.....Jan.	Reinforcement, Irving Unified.....Dec.	Truck, The Garford 30.....Mar.
Kinney Roadroller.....Sept.	Reintjes Flexible Arch Tile—Geo. P. Reintjes Co.....Apr.	Truck, Three-Ton Indiana.....Jan.
Koehring Co.—Improvement for Dragline Excavators.....Jan.	Relay Axle-Drive Motor Truck—Relay Motors Corp.....May	Trucks, Graham Bros., Motor.....Oct.
Koehring Dipper Trip—Koehring Co. ....Feb.	Repair Plant, Chausse Oil Asphalt Apr. Rix Truck Crane—Squier-Rix Co.....Aug.	Truck Pole Setter, Indiana Motor Sept. Turntable, Blaw-Knox Portable.....June
Koehring 58 Dandle Speedster.....June	Road Discs, Killefer.....Jan.	Universal Crane Motor Truck Crawler.....June
Konset-Sullivan Co.....Feb.	Roadroller, Kinney.....Sept.	Universal Trench Hoe.....Apr.
Lakewood Engineering Co.—Carr Road Forms.....June	Roller, Huber 5-ton.....Jan.	Valve, Automatic Cone Check—Automatic Cone Valve Co.....Oct.
Lakewood Engineering Co., Ohio—New Jack for Finishing Machine.....Oct.	Roller, Huber Motor.....Oct.	Valves, Electric Operation of.....Feb.
Lakewood Worm Speed Reduction Mixer.....July	Rollers, Erie Gasoline.....May	Vibrating Screen, Link Belt.....Jan.
LaMotte Chemical Products Co.—Enslow Chlorine Comparator.....June	Rome Grader, The—Rome Mfg. Co. Jan. Russell Motor Patrol.....May	W. M. Blair Mfg. Co., North Hydraulic Digger.....Oct.
La Plant-Choate Snow Plows.....Oct.	Ryan Grading Machine—Ryan Mfg. Corp. ....Feb.	Wagner Pipe Cutter—Oxweld Acetylene Co. ....Sept.
Leahy Vibrating Screen—Deister Concentrator Co. ....Feb.	Sanitation Corp.—Sumter Super-Siphon.....Apr.	Walker Cement Products—Rapid Drainage Pipe.....Aug.
Linings, ArkSAFE—Arkell Safety Bag Co. ....Mar.	Sauter Electric Time Switches—R. W. Cramer Co.....Oct.	Wallace Portable Electric Hand-saw.....July
Link-Belt "Clean Water" Intake Screens.....Sept.	"Savpav" Pouring Kettle—Thos. Fitzgerald Co.....Jan.	Walter Snow Fighters—Walter Motor Truck Co.....Aug.
Link Belt Vibrating Screen—Link Belt Co. ....Jan.	Saw, Air-Driven Hand—Ingersoll-Rand Co. ....May	Ward-Love Pump Co.—Water Softener for Homes.....June
Linn Tractor—Linn Mfg. Corp.....Apr.	Scraper and Trailer.....Feb.	Wausau Senior Snow Plow, The.....Mar.
Littleford Bros., Cincinnati—Oil Burning Kettle for Road Work.....Sept.	Scraper, Miami.....Sept.	Wells, Sullivan Air-Made.....Dec.
Littleford Oil-Burning Kettle—Littleford Bros. ....Apr.	Scraper with Cletrac Tractor, Miami Power.....Nov.	Wester & Boone Stump Puller.....Dec.
	Screen, Dorreo Bar.....July	Wheels, Athey Truss.....Dec.
	Screen, Leahy Vibrating.....Feb.	Zenith Fuel Filter—Zenith Detroit Corp. ....Mar.
	Screen, The Traylor Vibrator.....June	Zenith Shovels—Zenith Shovel Co.....Feb.
	"Seethru" Signs—Essco Mfg. Co.....Mar.	Zone Painting Machine—Continental Prod. Co. ....Feb.
	Self-Loading and Elevating Plant, Andrews.....May	
	Semi-Trailer Hitches for Tractors and Trucks.....Nov.	
	Septic Tanks, Super.....Dec.	
	Sharpener, New Leyner Drill Steel—Ingersoll-Rand Co.....Sept.	



